

--CROSS REFERENCE TO RELATED APPLICATIONS

B¹ This application is a continuation-in-part of application Serial No. 09/535,953, filed March 27, 2000, now U.S. Patent 6,394,783, and a continuation-in-part of application Serial No. 09/453,457, filed December 2, 1999.--

IN THE CLAIMS:

Please cancel claims 1-29 and 31-46 without prejudice.

Please add new claims 47-73 as follows.

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47. (new) A thermoforming process for preparing a thermally crystalline polyester food tray exhibiting dimensional stability at elevated temperatures, the process comprising:

B² (i) preparing a polymeric composition comprising an alkylene terephthalate or naphthalate bulk polymer; from about 4 to about 15 wt% of an additive comprising a substantially amorphous co-polymer of ethylene and an acrylate; and from about 0.1 to about 4 wt% of a compatibilizer/emulsifier/surfactant (CES) comprising a grafted or backbone co-polymer or ter-polymer of ethylene and a glycidyl acrylate or maleic anhydride, and optionally an acrylate selected from the group consisting of methacrylate, ethylacrylate, propylacrylate, butylacrylate, ethylhexylacrylate, and mixtures thereof;

(ii) extruding said polymeric composition through an extrusion die to form a thermoformable extrudate in a substantially non-oriented state;


(iii) contacting the extrudate with a shaping surface to thermoform the extrudate into at least one food tray; and

(iv) separating and recovering the at least one food tray.

B² 48. (new) The process of claim 47 wherein said bulk polymer is selected from the group consisting of PET, PEN, PETG, PCT, PCTA, PBT, PTT, and mixtures thereof.

49. (new) The process of claim 47 wherein said additive is selected from the group consisting of ethylene/methylacrylate co-polymer, ethylene/butylacrylate co-polymer, ethylene/ethylacrylate co-polymer, ethylene/ethylhexylacrylate co-polymer, and mixtures thereof, and optionally contains a core-shell toughener.

50. (new) The process of claim 47 wherein said CES is selected from the group consisting of ethylene/glycidyl methylacrylate co-polymer, ethylene/maleic anhydride co-polymer, ethylene/glycidyl methacrylate/methacrylate ter-polymer, ethylene/glycidyl methylacrylate/ethylacrylate ter-polymer, ethylene/glycidyl methacrylate/butylacrylate ter-polymer, ethylene/glycidyl methacrylate/ethylhexylacrylate ter-polymer, ethylene/maleic anhydride/methacrylate ter-polymer, ethylene/maleic anhydride/ethylacrylate ter-polymer, ethylene/maleic anhydride/butylacrylate ter-polymer, ethylene/maleic anhydride/ethylhexylacrylate ter-polymer, and mixtures thereof.

51. (new) The process of claim 47 wherein said food tray at a thickness of about 15 to 25 mils has a Dynatup Impact toughness rating at 70°F (21°C) of at least 125 and Dynatup Impact toughness rating at -20°F (-29°C) of at least 120. 

 52. (new) The process of claim 51 wherein said Dynatup rating at -20°F (-29°C) is at least 140.

53. (new) The process of claim 52 wherein said Dynatup rating at -20°F (-29°C) is at least 150.

54. (new) The process of claim 47 wherein said bulk polymer, following heat setting, has a final intrinsic viscosity that is at least about 70% of the initial intrinsic viscosity of said bulk polymer.

55. (new) The process of claim 54 wherein said final intrinsic viscosity is at least about 75% of said initial intrinsic viscosity.

56. (new) The process of claim 55 wherein said final intrinsic viscosity is at least about 80% of said initial intrinsic viscosity.

57. (new) The process of claim 56 wherein said final intrinsic viscosity is at least about 85% of said initial intrinsic viscosity.

58. (new) The process of claim 47 further comprising a step of combining the trimmed and

removed portions of the extrudate with virgin materials of step (i).

B² 59. (new) A thermally crystalline polyester food tray exhibiting dimensional stability at elevated temperatures, the food tray made by a process comprising:

(i) preparing a polymeric composition comprising an alkylene terephthalate or naphthalate bulk polymer; from about 4 to about 15 wt% of an additive comprising a substantially amorphous co-polymer of ethylene and an acrylate; and from about 0.1 to about 4 wt% of a compatibilizer/emulsifier/surfactant (CES) comprising a grafted or backbone co-polymer or ter-polymer of ethylene and a glycidyl acrylate or maleic anhydride, and optionally an acrylate selected from the group consisting of methacrylate, ethylacrylate, propylacrylate, butylacrylate, ethylhexylacrylate, and mixtures thereof;

(ii) extruding said polymeric composition through an extrusion die to form a thermoformable extrudate in a substantially non-oriented state;

(iii) contacting the extrudate with a shaping surface to thermoform the extrudate into at least one food tray; and

(iv) separating and recovering the at least one food tray.

60. (new) The food tray of claim 59 wherein said bulk polymer is selected from the group consisting of PET, PEN, PETG, PCT, PCTA, PBT, PTT, and mixtures thereof.

61. (new) The food tray of claim 59 wherein said additive is selected from the group consisting of ethylene/methylacrylate co-polymer, ethylene/butylacrylate co-polymer, ethylene/ethylacrylate co-polymer, ethylene/ethylhexylacrylate co-polymer, and mixtures thereof, and optionally contains a core-shell toughener.

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62. (new) The food tray of claim 59 wherein said CES is selected from the group consisting of ethylene/glycidyl methylacrylate co-polymer, ethylene/maleic anhydride co-polymer, ethylene/glycidyl methacrylate/methacrylate ter-polymer, ethylene/glycidyl methylacrylate/ethylacrylate ter-polymer, ethylene/glycidyl methacrylate/butylacrylate ter-polymer, ethylene/glycidyl methacrylate/ethylhexylacrylate ter-polymer, ethylene/maleic anhydride/methacrylate ter-polymer, ethylene/maleic anhydride/ethylacrylate ter-polymer, ethylene/maleic anhydride/butylacrylate ter-polymer, ethylene/maleic anhydride/ethylhexylacrylate ter-polymer, and mixtures thereof.

63. (new) The food tray of claim 59 which, at a thickness of about 15 to 25 mils, has a Dynatup Impact toughness rating at 70°F (21°C) of at least 125 and Dynatup Impact toughness rating at –20°F (-29°C) of at least 120.

64. (new) The food tray of claim 63 wherein said Dynatup Impact toughness rating at –20°F (-29°C) is at least 140.

65. (new) The food tray of claim 64 wherein said Dynatup Impact toughness rating at -20°F (-29°C) is at least 150.

B² 66. (new) The food tray of claim 59 wherein said bulk polymer, following heat setting, has a final intrinsic viscosity that is at least about 70% of the initial intrinsic viscosity of said bulk polymer.

67. (new) The food tray of claim 66 wherein said final intrinsic viscosity is at least about 75% of said initial intrinsic viscosity.

68. (new) The food tray of claim 67 wherein said final intrinsic viscosity is at least about 80% of said initial intrinsic viscosity.

69. (new) The food tray of claim 57 wherein said final intrinsic viscosity is at least about 85% of said initial intrinsic viscosity.

70. (new) The food tray of claim 57 wherein trimmed and removed portions of the extrudate are combined with virgin materials of step (i).

71. (new) The food tray of claim 66 wherein said initial intrinsic viscosity is less than about 0.90.
